

REMARKS

In response to the Office Action dated September 11, 2002, claims 1 and 2 have been amended and new claims 3-22 have been added. Claims 1-22 are now in the case. Reexamination and reconsideration of the application, as amended, are requested.

The Office Action stated that "...[C]laims 1, 2 are rejected under 35 U.S.C. 102(b) as being obvious by Nishikori et al. (US 5880751)."

The Applicants respectfully traverse this rejection in light of the amendments to the claims and the arguments below.

According to the *MPEP*, a rejection under 35 U.S.C. 102(b) is not proper on grounds of obviousness, but on anticipation grounds only. Namely, "[A] claim is anticipated **only if each and every element** as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." [*emphasis added*] *MPEP* 2131, citing Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). In this case, Nishikori does **not** disclose all of the Applicant's claimed elements.

Specifically, the Applicant's invention recites in part "...**a thermal response model** of the printhead and an **ejection history** of the ejection elements that defines a **dynamic estimate** of the temperature distribution across the printhead..."

In contrast, Nishikori simply discloses "...an ink ejection control method for an ink jet recording apparatus..." for "...detecting operating conditions relating to a state of ink ejection from the recording head, detecting temperature adjacent to the recording head and changing a driving signal for driving the recording head for ejecting ink from the recording head, on the basis of the results of the state detection and the temperature detection." (see Abstract of Nishikori).

However, unlike the Applicant's **amended** claimed invention, Nishikori does **not** disclose the Applicant's claimed **thermal response model** and **ejection history** of the ejection elements that defines a **dynamic estimate** of the temperature distribution across the printhead. Thus, clearly, Nishikori does **not** disclose all of the elements of the Applicant's invention and therefore the rejection should be withdrawn. Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 2 USPQ2d 1051 (Fed. Cir. 1987). *MPEP* 2131.

With regard to the dependent claims, since they depend from the respective independent claims argued above and contain additional limitations, they are therefore

also patentable at least on the same basis (MPEP § 2143.03).

In view of the arguments and amendments set forth above, the Applicants respectfully submit that the rejected claims are in immediate condition for allowance. The Examiner is therefore respectfully requested to withdraw the outstanding claim rejections and to pass this application to issue. Additionally, in an effort to expedite and further the prosecution of the subject application, the Applicants kindly invite the Examiner to telephone the Applicants' attorney at (818) 885-1575 if the Examiner has any questions or concerns. Please note that all correspondence should continue to be directed to:

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Respectfully submitted,
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

The following are marked-up versions of claims 1 and 2:

1. (Once Amended) A temperature control system for an inkjet printhead assembly, comprising:

a printhead assembly having ink ejection elements energizable by an electrical pulse having an amplitude and pulse width;

a sensor coupled to the printhead assembly for generating a signal representative of the printhead temperature;

a memory for storing current printhead operating parameters, a thermal response model of the printhead and an ejection history of the ejection elements that defines a dynamic estimate of the temperature distribution across the printhead; and

a controller for reading a nominal operating pulse width, the signal from the sensor, the dynamic estimate and the printhead operating parameters, said controller calculates an adjusted pulse width using the nominal operating pulse width, the signal from the sensor and the current printhead operating parameters;

wherein the controller uses the adjusted pulse width to control printhead temperature.

2. (Once Amended) A method of controlling the temperature of an inkjet printhead comprising:

[providing a printhead assembly having ink ejection elements energizable by an electrical pulse having an amplitude and pulse width;]

reading a nominal printhead operating temperature [and a nominal operating pulse width];

obtaining [current printhead operating parameters from a memory] a thermal response model of the printhead and an ejection history of the ejection elements that defines a dynamic estimate of the temperature distribution across the printhead and a current printhead operating temperature using a sensor on the printhead;

[adjusting the pulse width based on the printhead operating parameters and the measured temperature of the printhead; and

applying the adjusted operating pulse width to the printhead to control printhead temperature] controlling the temperature of the printhead using the dynamic estimate and the measured temperature of the printhead.